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10/626,165	07/24/2003	Christopher Cave	I-2-0369.1US	9718

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EXAMINER	
LAM, DUNG LE	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/626,165	CAVE ET AL.	
	Examiner	Art Unit	
	Dung Lam	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *10/12/06*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ___.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action mailed on 2/5/07 is persuasive and, therefore, the finality of the previous action is withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made..

Claims **1, 4, 6, 8-9, 12-13, 16, 20, 23, 26-28, 29, 31, 35-36, 39, 41, 43, 45, 48-49, 51 and 55-56** rejected under 35 U.S.C. 103(a) as being unpatentable by **Blakeney et al.** (US Patent No. 5267261) in view of **Velazquez et al.** (US Patent No. 6,593,880).

1. Regarding claim **1**, **Blakeney** teaches a communication network for wireless communication with mobile units comprising (Abstract and Figures 1 and 8): a plurality of base stations (12, 14, 16, Fig. 1), each providing duplex wireless communication services in a respective geographic coverage area that may or may not overlap with the geographic coverage areas of other of the base stations, and an interface connected to the base stations (controller 10, Figs. 1, C7 L47-53), a method for establishing wireless communication comprising: transmitting an omnidirectional sounding pulse from a

wireless mobile unit located in a geographic coverage area of at least one of the base stations (Step 218, C27 L23-24); communicating information related to the detected sounding pulse to the interface by each base station detecting the sounding pulse (C27 L24-29); selecting a base station from among the base stations that detected the sounding pulse for mobile unit communication based on the communicated information (C27 L29-39); and continuing the mobile unit's wireless communication via the selected second base station to establish a wireless communication link (C27 L40-48). Although, **Blakeney** does not explicitly teach that the wireless communication link is a beam. **Velazquez** teaches a handoff method in which the base station uses beamforming for communication link (Col. 6, In. 65 - Col. 7 In 15, Col. 8, In 25-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply **Blakeney**'s teaching of the handover method and Velazquez's teaching of using beam forming to establish the communication link and at the same time reduce the system's interference as suggested by Velazquez (see Col. 5 In. 65- col. 7 Ln5).

2. Regarding claim **23, Blakeney** teaches a communication network for wireless communication with mobile units comprising (Abstract and Figures 1 and 8): a plurality of base stations (12, 14, 16, Fig. 1), each providing duplex wireless communication services in a geographic coverage area that may or may not overlap with the geographic coverage areas of other of the base stations; at least one base station interface connected to the base stations (controller 10, Figs. 1, C7 L47-53); each base station configured to detect sounding pulses emitted from mobile units in order to

establishment wireless communication with such mobile units ; each base station configured to communicate, information related to a detected sounding pulse from a mobile unit to a selected interface (BS sends Report Msg to MTSO, C27 L24-29); each interface, when selected, configured to select a base station for wireless communication with a mobile unit that transmitted a sounding pulse based on the information communicated from each base station that detected the sounding pulse emitted from that mobile unit (C27 L29-39); and each base station configured to direct a communication link when selected to a respective mobile unit to establish wireless communication (C27 L29-48). Although, Blakeney does not explicitly teach that the wireless communication link is a beam. Velazquez teaches a handoff method in which the base station uses beamforming for communication link (Col. 6, In. 65 - Col. 7 In 15, Col. 8, In 25-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply Blakeney's teaching of the handover method and Velazquez's teaching of using beam forming to establish the communication link and at the same time reduce the system's interference as suggested by Velazquez (see Col. 5 L65- col. 7 L5).

3. Regarding claim 35, 48 and 55, they are similar to the scope of claims 1 and 23. Therefore, they are rejected for the same reasons as claim 1 and 23.

4. Regarding claim **9**, **Blakeney** and Velazquez teach the method of claim 1, wherein: **Blakeney** further teaches the transmitting of an omnidirectional sounding pulse is from each of a plurality of mobile units (Step 218, C27 L23-24); the communicating information includes communicating information related to each

distinguishable sounding pulse from each respective mobile unit detected by a base station to a respective selecting interface for base station selection with the respective mobile unit (C27 L24-29); the base station selection includes selecting a base station by each respective selecting interface for each respective mobile unit communication based on the information related to the distinguishable detected sounding pulse of the respective mobile unit from each base station that detected a distinguishable sounding pulse of the respective mobile unit (C27 L29-39); and for each respective mobile unit for which at least one base station received a distinguishable sounding pulse, directing a communication beam from the respective selected base station to the mobile unit to establish wireless communication (**Blakeney** C27 L40-48 and Velazquez Col. 6, In. 65 - Col. 7 In 15, Col. 8, In 25-40).

5. Regarding claims 13, **27, 28, 36 and 56**, they are subsets of claims 1 and 9. Therefore, they are rejected for the same reasons as claim 1 and 9.

6. Regarding **claim 16**, **Blakeney and Velazquez** teach all the limitations of the method of claim **1, Velazquez** teaches the mobile unit is equipped with a global positioning system (GPS) and transmitting of mobile unit location information associated with the sounding pulse transmitted by the mobile unit and/or includes transmitting of identification information associated with the sounding pulse transmitted the mobile unit (C8 L20-37). Therefore it would have been obvious for one of ordinary skill in the art at the time of the invention for to add Valazquez's GPS capability to Blakeney's handoff

method to speed up the location positioning of the handset and thus to speed up a faster handoff process.

7. Regarding claim **4**, **Blakeney** teaches all the limitations of the method of claim **3** but is not explicit that Node B is configured to operate its antenna to form a communication beam that carries common channels that encompasses the relative location of a plurality of UEs so that the formed beam provides common channel service to a plurality of UEs. Nonetheless, it is a practical design system to service a plurality of UEs rather than a single one to increase capacity of the system. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to service multiple UEs to maximize system capacity.

8. Regarding claims 6, 12, 26, 39 and 41, they are similar to the scope of claim 4. Therefore, they are rejected for the same reasons as claim 4.

9. Regarding **claims 20, 31, 45 and 51**, they are similar to the scope of claims 16. Therefore, they are rejected for the same reasons as claim 16.

10. Regarding claim **8**, **Blakeney** and Velazquez teach all the limitations of the method of claim 1. **Blakeney** further teaches the mobile units are each configured to monitor the power level of a directed communication beam from a base station that is

received by the mobile unit and to transmit an omnidirectional sounding pulse if the monitored power level falls below a predefined level (Step 216 and 218 of Fig. 8).

11. Regarding claims **29, 43 and 49**, they are similar to the scope of claim 8. Therefore, they are rejected for the same reasons as claim 8.

12. Claim **2-3, 5, 10-11, 24-25, 27, 37-38 and 40** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Blakeney et al.** (US Patent No. 5267261) and **Velazquez et al.** (US Patent No. 6,593,880) in view of **Bark et al.** (US Patent No. 6445917).

13. Regarding **claim 2 and 10**, **Blakeney** and **Velazquez** teach all the limitations of the method of claim **1** but do not explicit teach that the radio network is a UMTS Terrestrial Radio Access Network (UTRAN), each base station is a Node B, the interface is a Radio Network Controller (RNC) and the mobile unit is a mobile User Equipment (UE); In an analogous art, **Bark** teaches a UMTS Terrestrial Radio Access Network (UTRAN) (**24**, see Figure 1A), each base station is a Node B (**28**), the interface is a Radio Network Controller (RNC) **26** and the mobile unit is a mobile User Equipment (3G terminology); the communicating information is between Node Bs and the RNC via an Iub or combination Iub/Iur interface (Col. 5, lines 44-45, and 3G standards); the second base station selection is performed by the RNC by selecting a second Node B (col. 8, lines 50-55); and the UE's communication continued via the second Node B is

via a Uu interface (inherent). UMTS is a system used in the 3G which is widely used. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the handover method to also establish this handover method in the UMTS system to keep the network system up-to-date with the current technology.

14. Regarding claims **24 and 27**, they have corresponding limitations to claim 2. Therefore, they are rejected for the same reasons as claim 2.

15. Regarding **claim 3**, **Blakeney, Velazquez and Bark** teach all the limitations of the method of claim **2**. **Velazquez** further teaches a step of determining a relative location of the UE with respect to the beamforming antenna of the selected second Node B based on information related to the detected sounding pulse whereby the continuing of the UE's communication via the second Node B includes operating the selected Node B's antenna to form a communication beam for at least one dedicated channel covering a selected portion of the coverage area serviced by the second Node B that encompasses the determined relative location of the UE (Col. 7, ln 25-68, Col. 8, ln 25-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply **Blakeney and Bark**'s teaching of the handover method in the UMTS system and Velazquez's teaching of locating the UE and directing the beam toward the UE to reduce the system's interference.

16. Regarding claims 5, 11, 25, 38 and 40, they are similar to the scope of claim 3. Therefore, they are rejected for the same reasons as claim 3.

17. **Claims 7, 14-15, 17-19, 21-22, 30, 32-34, 42-43, 46-47, 50 and 52 - 54** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Blakeney et al.** (US Patent No. 5267261) and **Velazquez et al.** (US Patent No. 6,593,880) in view of **Anderson et al.** (US Patent No. 5396541).

18. Regarding claim **7**, **Blakeney** teach all the limitations of the method of claim **1**. Blakeney does not explicitly teach that the method is restarted if the mobile unit does not receive a directed communication beam from a base station within a predefined time period from its transmitting of an omni-directional sounding pulse. However, Anderson teaches a method of adjusting the power to a higher or lower level if the mobile is far or close from the base stations respectively (Col. 9, lines 50-15). In addition, it is also well known in the field of communications that after a failed transmission, one of ordinary skill in the art may use back-off algorithm to resend the signal in a predefined period of time. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine **Blakeney**'s handoff method and **Anderson**'s teaching of a restarting the process of sending the signal (if the mobile is far away from the base station) at a predefined period to increase the chance of a successful handoff.

19. Regarding claims **14** and **42**, they are similar to the scope of claim 7. Therefore, they are rejected for the same reasons as claim 7.

1. Regarding claim **15**, **Blakeney** and **Velazquez** teach all the limitations of the method of claim 83 but silent on a mobile ID. In an analogous art, **Anderson** further teaches that the mobile unit is configured to transmit an omnidirectional sounding pulse that includes mobile unit identification information (the mobile responds to a poll message with its identification, Col. 12, lines 52-58). Therefore, one skill in the art would combine Blakeney and Velazquez's teaching of handoff with Anderson's teaching of the mobile identification to make it easier to identify where the signal is coming from and thus facilitate the handoff process.

20. Regarding claims 19, 32 and 53, they are similar to the scope of claim 15. Therefore they are rejected for the same reasons as claim 15.

2. Regarding claim 17 and 52, **Blakeney** and **Velazquez** teach all the limitations of the method of claim **9/48** but not explicitly teach that the transmitting of an omnidirectional sounding pulse includes transmitting a subsequent sounding pulse of increased power by the mobile unit if handover does not occur within a predefined time period from its transmitting of an omnidirectional sounding pulse. However, Anderson teaches a method of adjusting the power to a higher or lower level if the mobile is far or close from the base stations respectively (Col. 9, lines 50-15). In addition, it is also well known in the field of communications that after a failed transmission, one of ordinary skill in the art may use back-off algorithm to resend the signal in a predefined period of time. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine **Blakeney**'s handoff method and **Anderson**'s teaching

of a increasing the signal power (if the mobile is far away from the base station) at a predefined period to increase the chance of a successful handoff.

3. Regarding claim **18**, **Blakeney and Velazquez** all the limitations of the method of claim **9** but fail to expressly teach that the transmitting of an omnidirectional sounding pulse includes transmitting a series of omnidirectional sounding pulses of increasing power from the mobile unit. However, Anderson teaches a method of adjusting the power to a higher or lower level if the mobile is far or close from the base stations respectively (Col. 9, lines 50-15). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine **Blakeney**'s handoff method and **Anderson**'s teaching of retransmitting the signal with increasing power (assuming the mobile is far away from the base station) to increase the chance of a successful handoff.

21. Regarding claims 22, 34, 47 and 54, they are similar to the scope of claim 18. Therefore they are rejected for the same reasons as claim 18.

22. Regarding claims 21, 30, 33, 43, 46 and 50, they are similar to the scope of claim 18. Therefore they are rejected for the same reasons as claim 17.

23. Claims 1, 23, 35, 48 and 551 are further rejected under 35 U.S.C. 103(a) as being unpatentable over Farwell et al. (US Patent No. 5396541) in view of Tarallo (US Patent No. 5054035).

24. Regarding claim 1, Farwell teaches a communication network for wireless communication with mobile units comprising: a plurality of base stations (BSs 102-104,

Fig. 1), each providing duplex wireless communication services in a respective geographic coverage area that may or may not overlap with the geographic coverage areas of other of the base stations, and an interface connected to the base stations, a method for establishing wireless communication comprising: transmitting an omnidirectional sounding pulse from a wireless mobile unit located in a geographic coverage area of at least one of the base stations (MS sends synchronization pattern to BSs in response to start handoff message from BS, C3 L37- 51); communicating detected signal strength to the interface by each base station detecting the sounding pulse (C3 L51-65). Although Farwell does not explicitly teach that the detected signal strength is related to the synchronization pattern, Tarallo teaches that the synchronizations patterns are used to derive the signal quality in handoff process (Abstract). Therefore, one skill in the art at the time of the invention would combine Farwell's handover method with Tarallo's explicit teaching of deriving the signal strengths from the synchronization pattern to obtain the signal measurement quickly. Thus, in view of Tarallo's clarified invention, Farwell further teaches the step of communicating information related to the detected sounding pulse to the interface by each base station detecting the sounding pulse (sending back signal strength based on synchronization pattern, C3 L60-64); selecting the second base station from the base stations that detected the sounding pulse based on the communicated information (C3 L65- C4 L2); and continuing the mobile unit's wireless communication via the selected second base station (C4 L2-5).

25. Regarding claim 23, 35, 48 and 55, they are similar to the scope of claim 1. Therefore, they are rejected for the same reasons as claim 1.

Response to Arguments

26. Applicant's arguments filed 5/7/07 have been fully considered but they are not persuasive.

27. Applicant argues on page 20, "the claimed invention does not require the mobile unit to have an existing wireless communication with a base stations prior to the establishment of a wireless communication with that base station." The examiner disagrees. Although the claim does not require any prior establishment, it does not exclude any prior establishment of a wireless communication with that base station.

28. Applicant argues on page 21, "Blakeney et al. is not analogous art because it is not directed toward the establishment of a wireless communication between a mobile station and a base station. The examiner respectfully disagrees. Blakeney's invention is about soft handoff of a wireless communication of a mobile. All that is required is the establishment of a mobile with a base station which is known to be achieved by either soft handoff or regular handoff; the examiner notes that the end result of both these two types of handoff is the establishment of communication of a mobile and a base station.

29. The examiner also notes that by definition handoff is a process which involves in exchanging signal quality/information between a mobile station and one or two base stations and in response to an analysis of the exchanged information, a base station is

selected to be the serving station to carry out the rest of the wireless communication. This process clearly is the same as the claimed method.

30. Applicant argues that the "pilot strength measurement report message" is not a sounding pulse. The examiner disagrees. The present application's specification (paragraph [0016]) defines that a sounding pulse is a radio frequency signal with **or without** intelligence. Thus a pilot signal is a radio frequency signal which reads on a sounding pulse.

31. Similarly, applicant argues that Valazquez, Farwell and Bark do not teach or suggest an omnidirectional sounding pulse transmitted by a mobile unit and detected by base stations for initiating mobile communication. However, this limitation has been addressed has been by Blakeney (see paragraph 29 above), therefore, it is moot.

32. Blakeney et al. does not teach or suggest using the Pilot Strength Measurement Report Message to establish a wireless communication between a mobile unit and a base station as claimed. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., using the Pilot Strength Measurement Report Message to establish a wireless communication between a mobile unit and a base station as claimed) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Lam whose telephone number is (571) 272-6497. The examiner can normally be reached on M - F 9 - 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is (571) 272-6497.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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